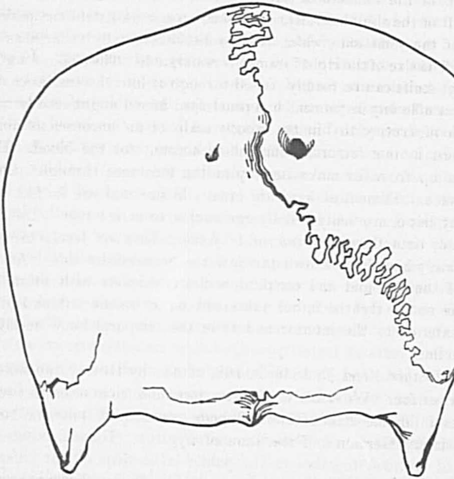
ART. XVII.—*Description of an Asymmetrical Skull and of an Atlas in Two Segments.* By W. W. KEEN, M.D., of Philadelphia. (With two wood-cuts.)

I. THE SKULL which I shall briefly describe came from a negro subject, about 35 years of age, dissected in my anatomical school. The first thing we notice is that the *lambdoidal suture,* while perfectly distinct on the right

Fig. 1.



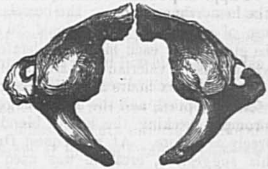
side, is so completely ossified on the left side that except near the mastoid process no trace of it is seen (see Fig. 1). The left parietal and the occipital are one bone. What is also unusual in such cases, the suture between the two parietal foramina is perfectly distinct. Next we notice the presence of two *parietal foramina,* but of very unequal size. On the left side a small pin will barely penetrate, but the right one measures a quarter of an inch in each direction. Veins of very unequal size passed through both foramina to the superior longitudinal sinus No grooves for branches of the meningeal arteries are seen leading to the foramina on the inside. Again we observe, that the skull is markedly *asymmetrical,* the right parietal region being far more prominent than the left; but by a slight compensatory development it will be observed that the occipital is a little lower on the left side, the mastoid process is nearly one-fourth of an inch lower, and even the left condyle of the occipital bone is lower than the right. The frontal region is perfectly symmetrical. On measuring carefully from the middle of the root of the nose horizontally to the median line behind, I found that the left side measured $9\frac{11}{16}$ inches, but the right side $10\frac{2}{16}$ inches, showing a difference of $\frac{7}{16}$ of an inch. Measuring from the median line at the vertex to the end of the mastoid processes, I was surprised to find only $\frac{1}{16}$ of an inch difference until I observed the difference of level of the mastoid processes. The face is considerably twisted towards the right side.

The explanation of all these facts is found in the early ossification of the left half of the lambdoidal suture. This arrested the development of the left half of the skull laterally, and closed to a large extent the parietal foramen of the same side, which was probably originally as large as the right one. The size of the right foramen is remarkable. The blade of a good sized pocket knife can be readily passed through it into the cranial cavity, and if in a scuffle any instrument had penetrated here it might readily have been overlooked, especially in the woolly scalp of an unconscious negro with numerous other wounds sufficient to account for the blood. Erysipelas could also easily make its way to the meninges through such a large foramen. These foramina vary greatly in size, and are in fact very often absent, but occasionally are as large as this, or even larger. The face has probably been thrown to the right by the downward development of the left side, which has thrown the jaw to the opposite side. At the junction of the sphenoid and occipital bodies a complete ossification has taken place on the right side, but a deep slit exists on the left, extending from the exterior to the interior and from the temporal bone nearly to the middle line.

Wrany (*Prager Viertelj.*, 1866, ii. 108, quoted by Henle, *Anatomie*, i. 171) describes four such skulls with large foramina from seven to twenty millimetres in diameter, and Hyrtl (*Topogr. Anat.*, p. 58) says no larger ones exist in any German or French museum.

II. The atlas, as seen in Fig. 2, is in two lateral segments. It is the only one I have ever seen, and I cannot find, after considerable search, any similar instance recorded. It was obtained in my dissecting-room from a man about 70 years of age. Between the two segments anteriorly cartilage existed; between the two posteriorly, whether cartilage or fibrous tissue, I cannot say, as the peculiarity was only discovered after boiling. The facet for the odontoid process is unequally divided, the greater part being on the left side, and of course a similar peculiarity exists on the odontoid itself. The axis and third cervical vertebræ are com-

Fig. 2.



pletely ossified, no point of separation remaining except the intervertebral foramina. This would limit the motion of the neck and head to a considerable extent, and as if to compensate for the loss, the superior articular processes of the axis are considerably cupped, and the inferior of the atlas correspondingly rounded. All four are oval in shape with the long axis running backward and outward. Even the inferior surface of the body of the third cervical is much more deeply convex antero-posteriorly than usual, showing compensatory movement here. The pedicles and laminæ of both the second and third cervical, and the body of the third are twisted very markedly to the left, so that their spinous processes deviate about $\frac{3}{16}$ of an inch from the middle line. Unfortunately, the skull of the subject was taken away, and the occipital bone could not be observed.

Authors differ greatly as to the points of ossification of the atlas. Our common text-books (Gray, Sharpey & Quain) give three, viz.: one for each of the lateral masses, and one occasionally for the anterior arch. Others (*e. g.*, Cruveilhier) give four, one on each side of the anterior and posterior arches, or (Wilson) one for each arch and each lateral mass. Others as many as six, three upon each side. While not deciding between these conflicting views, the specimen would seem to show at least a symmetrical arrangement.

ART. XVIII.—*Constitutional Hemorrhage.* By WILLIAM M. HOLTON, M.D., of New Harmony, Indiana.

HARRY C., age 14, on Nov. 25, 1870, received a slight wound of the hand, from the scratch of a saw, which was followed by a continual oozing of blood, resisting all the remedies usually employed to arrest hemorrhage. He became so weak, and such alarming symptoms appeared, that on Nov. 30th I was summoned to take charge of the case. I found him very pale, with a tendency to syncope if he attempted to assume the erect position; tongue heavily coated with a slimy fur, bowels costive, headache, great thirst, and restlessness. Pulse 136, feeble and fluttering. The wound was now about the size of a silver dime and disposed to slough; the whole hand much swollen.

I applied powdered persulphate of iron (Monsel's salt), which arrested the hemorrhage at once; the bowels were thoroughly evacuated by the free use of castor oil. As a tonic, 20 drops tr. ferri chlor. were directed to be given after each meal, if tolerated by the stomach. For his nervous symptoms tr. valerian and Hoffmann's anodyne were prescribed.

In about six hours a partial coagulum formed, raising the powder previously applied, and the hemorrhage returned. I renewed the application, promply checking the loss of blood, until Dec. 1st, when it returned as freely as before. At my request Dr. Robson was now called in, and, at his suggestion, creasote was used to clean off the rapidly increasing slough, and a graduated compress was applied to the wound, and the hand was bandaged, suspending further loss until Dec. 2d, when the pain from compression could no longer be endured, and the compress was removed.